

## ABSTRACT

A duplexer includes an input/output line, a receive segment and a transmit segment. The transmit segment is connected to the input/output line. The receive segment includes a balun and a differential filter. The  
5 balun includes a first output, a second output, a first transmission line and a second transmission line. The first transmission line is connected between the input/output line and the first output. The second transmission line is connected between the input/output line and the second output. The differential filter is connected to the first output and the second output. The  
10 differential filter shorts the first output and the second output at transmit band frequencies of the duplexer.